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MORTON ARBORETUM
JOY MORTON · FOUNDER
BULLETIN OF
LISLE, ILLINOIS POPULAR INFORMATION

BROAD-LEAVED EVERGREENS (ERICACEOUS)[1] AT THE MORTON ARBORETUM

The almost complete absence of broad-leaved evergreens in Chicago area landscape plantings, an omission especially noticeable throughout the winter months and during the late spring and early summer blooming seasons, has stimulated a growing interest in this useful class of plants, surprising considering the special cultural requirements known to be essential to their successful establishment and maintenance.

Although broad-leaved evergreens had been previously tried in numerous locations within the Arboretum grounds, it was the desire to see what they would do under more controlled conditions that motivated establishment of the new collection in the spring of 1951. The site chosen for the experiment was in the eastern wooded area along Forest Road near the Overlook and almost opposite the entrance to parking area No. 6. Here, topography, exposure, land and air drainage and protection seemed to more closely approximate ideal growing conditions than any other location in which previous trials had been made. The soil had to be specially prepared, of course, an operation completed during the fall of 1950 preceding the initial planting done the following spring.

Contrary to the prevailing belief, temperature extremes alone are not entirely responsible for the limited use of broad-leaved evergreens locally. It is more often a lack of understanding of the soil preferences of the group, the necessary pH and the symbiotic relationship existing between certain mycorrhiza (fungi) present in acid soil and the roots of the Ericaceous plants. Once these important facts are recognized and heeded the other prerequisites present minor problems in comparison.

As most broad-leaved evergreens do best in soil predominantly acid in reaction, a specially prepared mixture is necessary in this area to provide a pH acceptable to them. On the "pH scale," by which soil reactions are measured, the neutral point is 7.0, with readings above denoting increasing alkalinity; those below increasing acidity. The preferred range for the Ericaceae is between pH 4.5 and 6.0, with pH 5.0 representing the ideal condition. At this point the necessary iron is more readily available to the

[1]Members of the Heath Family, all of which require an acid soil.

plant and the growth of beneficial mycorrhiza stimulated. We have found an ideal mixture to be one consisting of equal parts of woodland soil (top soil from oak woods), neutral sand (washed), decomposed oak leaf mold and peat moss (German or Swedish). If available, oak stump dirt (the rotted wood from stumps or fallen logs), pine needles or decomposed oak sawdust may be substituted for the peat. Our beds test pH 5.3. Acidity may be increased artificially by the use of ordinary sulphur, applied at a rate not exceeding 1 lb. per 100 square feet per application, ammonium sulfate (one tablespoon to 10 qts. of water) or a tannic acid solution consisting of one part commercial tannic acid to 50 parts of water. Aluminum sulfate, commonly recommended as a soil acidifier should, if used at all, be applied cautiously in view of the fact that its continued use may cause an aluminum toxicity harmful to both roots and mycorrhiza.

Poor drainage, sun and wind are among the worst enemies of the Ericaceae and in selecting a suitable planting site for members of the family due consideration must be given all three. The Arboretum collection is located in a natural wooded ravine sloping gradually in a north, northwesterly direction, where surface drainage is good and where a gravelly subsoil insures no standing water underground. For, none of the broad-leaved evergreens will tolerate soggy conditions even though they do prefer a constant moisture supply and high humidity. High overhead shade furnished by native oaks provides summer protection from bright sunlight and filtered light at other seasons. More winter shade would be desirable as a further protection against possible injury. A shelterbelt of coniferous evergreens surrounding the ravine adequately meets the wind problem and may in time provide the necessary evergreen shade. In home ground plantings a shaded north or northeast exposure is desirable with further protection on the west and north. Not only will this guard against the drying effects of hot summer winds, but lessen the chances of winter dessication as well. The latter results from excessive evaporation during sunny winter days when frozen soil around the roots prevents normal replacement of the moisture transpired through the leaves. Spraying the foliage in the fall with one of the new plastic sprays such as "Wiltpruf" will materially reduce evaporation, as will also a covering of evergreen branches placed over the plants.

Preceding actual planting the existing soil should be removed to a depth of two or two and a half feet and the excavation lined with 6 inches of cinders. Into this goes the soil mixture described above. To lessen the amount of lime leaching in from surrounding areas it is advisable to raise the planting beds above the existing grade. The cinders will deter earthworms to a certain extent, although eventually they will tunnel into the acidified soil depositing their castings of high lime content. During drouth periods the natural upward movement of ground moisture will also bring with it a certain amount of lime dissolved from the subsoil. These conditions may be overcome by confining the plantings to concrete or metal lined pits provided with drainage outlets at the base. For small collections discarded oil drums sawed in half and buried to within an inch or so of ground level make excellent containers accommodating single specimens nicely.

It is perhaps superfluous to mention that in establishing a planting of broad-leaved evergreens, only balled and burlapped stock should be used

In the Morton Arboretum Ericaceous Plant Collection

and that spring planting (April) is imperative. Most Ericaceae being shallow rooted and extremely sensitive to drying, benefit by a heavy moisture conserving mulch of oak leaves, pine needles or peat moss kept on the year around. A covering of this type also serves to maintain acidity. Cultivation is unnecessary, in fact harmful. Unless rainfall is ample and well spaced artificial watering will be necessary throughout the summer and fall. It should be done regularly and thoroughly, before drooping foliage indicates the need. Rain water is preferable due to the high pH (8) of our local well water, but it is possible to neutralize the latter by introducing acidifying chemicals into the hose line.

Regular fertilizing with one of the standard Rhododrendron and Azalea fertilizers in spring or early summer will help keep the plants in vigorous condition, but should chlorosis (iron deficiency) show up in the form of yellowing foliage, one of the new chelated iron foliar sprays should be applied to correct the situation.

A further word as to winter care. Although we have depended primarily on a covering of evergreen branches, plants of doubtful hardiness may be given added protection by encircling them with a ring of chicken wire filled with oak leaves.

Ericaceous Broad-leaved Evergreens currently included in the Morton Arboretum Collection

Arctostaphylos uva-ursi	Bearberry	P
Kalmia latifolia	Mountain Laurel	F-P
**Leucothoe Catesbaei*	Drooping Leucothoe	S
Leucothoe Catesbaei Rainbow	Variegated Drooping Leucothoe	Tr
Leucothoe recurva	Redtwig Leucothoe	S
**Pieris floribunda*	Mountain Pieris	S
**Pieris japonica*	Japanese Pieris	S
**Rhododendron carolinianum*	Carolina Rhododendron	S
Rhododendron carolinianum album	White Carolina Rhododendron	Tr
**Rhododendron catawbiense*	Catawaba Rhododendron	S
Rhododendron catawbiense alba	White Catawba Rhododendron	Tr
Rhododendron catawbiense hybrids	America	Tr
" " "	Dr. Dresselhuys	Tr
" " "	Ignatius Sargent	Tr
" " "	President Lincoln	S
Rhododendron laetevirens	Wilson Rhododendron	Tr
**Rhododendron maximum*	Rosebay Rhododendron	S
Rhododendron maximum hybrid	Cunningham's White	Tr
Rhododendron Smirnowi	Smirnow Rhododendron	Tr

Azaleas (Evergreen)

Rhododendron amoena (Kurume)	Tr
Rhododendron amoena coccinea (Kurume)	Tr

Rhododendron obtusum "Addy Wery" (Kurume)		Tr
Rhododendron "Gable Hybrids"	Gable Hybrid Azaleas	
" " "	*Elizabeth Gable	S
" " "	*Herbert	S
" " "	*La Roche	S
" " "	Louise Gable	Tr
" " "	Purple Splendor	Tr
" " "	Rosebud	Tr
" " "	*Royalty	S
" " "	Susan	F

Azaleas (Deciduous) with the same soil requirements as the Broad-leaved evergreens

Rhododendron Arnoldiana Early Dawn	Arnold Azalea hybrid	F
Rhododendron Arnoldiana Mello Glo	Arnold Azalea hybrid	F
Rhododendron Arnoldiana Mossieana	Arnold Azalea hybrid	F
Rhododendron Rose Banner #126	Beltsville Hybrid (promising)	Tr
Rhododendron calendulaceum	Flame Azalea	F
Rhododendron gandavense Daviesi	Ghent Azalea variety	Tr
" " *Fanny*	" "	Tr
" " *Nancy Waterer*	" "	Tr
" " *Pallas*	" "	Tr (promising)
**Rhododendron Westcroft Cadmium Red*	Kaempferi hybrid (semi-evergreen)	S
Rhododendron Thais	" "	Tr
**Rhododendron molle (mollis)*	Chinese Azalea	S
Rhododendron molle Chevalier de Reali	Chinese Azalea varieties	Tr
" " *Director Moerlands*	" "	Tr
" " *Emil Liebig*	" "	Tr
" " *Hugo Koster*	" "	Tr
" " *Koster's Brilliant*	" "	Tr
" " *Queen Emma*	" "	Tr
**Rhododendron mucronulatum (dauricum m.)*	Korean Rhododendron	S
Rhododendron obtusum Kaempferi	Torch Azalea	F
**Rhododendron Schlippenbachi*	Royal Azalea	S
Rhododendron Vaseyi	Pinkshell Azalea	P
**Rhododendron yedoense poukhanense*	Koreana Yodogawa Azalea	S
Rhododendron yodogawa "Orchid Pink"		Tr

S = Satisfactory F = Fair P = Poor Tr. = Still on trial
*Most adaptable for trial in the Chicago area.

E. L. KAMMERER

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